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procedure. The customer can easily modify the boot.tpl to insert their changes to boot.asm source without being lost during code generation.

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IN THE CLAIMS

Please amend the claims as follows:

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1. (AMENDED) A boot file generation method comprising:  
creating a boot template file comprising symbolic variable names that point to configuration registers within a programmable device;  
receiving user module selections with delineation of preferred configurations and functions associated with components of said programmable device;  
generating application files automatically based upon user-selected configurations and functions; and  
substituting said symbolic variable names with actual configuration register names.
  2. (AMENDED) A boot file generation method of Claim 1 further comprising automatic interrupt vector mapping which assigns the appropriate providing interrupt processing routine vector.
  3. (AMENDED) A boot file generation method of Claim 1 further comprising:  
providing an interface for selecting applicable user modules;  
facilitating programming of desired functionality into the programmable device; and  
executing an assembler process.

4. (AMENDED) A boot file generation method of Claim 3 wherein said user module is a preconfigured function that may be based on more than one block that work as a peripheral on the programmable device.

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5. (AMENDED) A boot file generation method of Claim 3 further comprising:  
viewing and modifying user module parameters including setting global parameters specifying interconnections between the selected user modules; and  
delineating a pin-out for each functional block making a connection between the software configuration and the hardware of the programmable device.

6. (AMENDED) A boot file generation method of Claim 1 further comprising emulating the programmable device using an in-circuit emulator for debugging.

7. (AMENDED) A boot file generation method of Claim 6 wherein the emulator allows the programmable device to be tested in a hardware environment while device activity is viewed and debugged in a software environment.

8. (AMENDED) A boot file generation method of Claim 3 further comprising:  
updating existing assembly source and C compiler code for device configurations;  
and  
generating application program interfaces (APIs) and interrupt service routines (ISRs).

9. (AMENDED) A boot file generation method of Claim 3 wherein the assembler process comprises operating on an assembly-language source code to produce executable code.

10. (AMENDED) A boot file generation method of Claim 9 further comprising compiling and building code into an executable file.

11. (AMENDED) A boot file generation method of Claim 9 further comprising linking programmed functionalities including device configuration.

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12. (AMENDED) A circuit comprising:  
a bus for communicating data;  
a microprocessor for processing data, said microprocessor coupled to said bus;  
a functional component coupled to said bus, wherein said functional component includes a plurality of functional blocks programmable to provide a plurality of functions and configurations; and  
a memory for storing configuration information including information associated with a boot file, said memory coupled to said bus.

15. (AMENDED) A boot file creation method comprising:  
assigning variable symbolic register names to a user module;  
establishing an association between the variable symbolic register names and actual configuration register names; and  
replacing the variable symbolic register names with actual configuration register names.

16. (AMENDED) The boot file creation method of Claim 15 further comprising loading the boot file on a target device.

17. (AMENDED) A boot file creation method of Claim 15 further comprising utilizing a boot template to establish the association between the variable symbolic register names and actual configuration register names.

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18. (AMENDED) A boot file creation method of Claim 17 further utilizing the boot template to replace the variable symbolic register names with the actual configuration register names.

19. (AMENDED) A boot file creation method of Claim 15 further comprising regenerating the boot file when a device configuration changes.

20. (AMENDED) A boot file creation method of Claim 15 wherein the boot file is created and loaded on a target device by a design tool.

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VERSION OF AMENDMENTS WITH CHANGES SHOWN:

IN THE SPECIFICATION

Please replace the paragraph beginning at page 1, line 4 with the following:

Embodiments of the present invention generally relate to the field of integrated circuit chips. More specifically, embodiments of the present invention pertain to a system and method for computer aided design for single-chip microelectronic systems [on a chip].

Please replace the paragraph beginning at page 1, line 9 with the following:

Electronic systems and circuits have made a significant contribution towards the advancement of modern society and are utilized in a number of applications to achieve advantageous